

CLAIMS

What is claimed is:

1. A variable capacity rotary compressor, comprising:
 - a rotating shaft to rotate in a forward direction and a reverse direction to vary a compression capacity of the compressor;
 - a shaft bearing which supports the rotating shaft;
 - an oil guide groove which is spirally formed on at least one of the shaft bearing and the rotating shaft to supply oil; and
 - an oil storing chamber at an upper portion of the shaft bearing to communicate with the oil guide groove, and to store a predetermined amount of oil therein.
2. The variable capacity rotary compressor according to claim 1, wherein the oil storing chamber has a larger inner diameter than an outer diameter of the rotating shaft to store the oil therein, the oil storing chamber being shaped like a ring and being mounted at a lower portion of the upper portion of the shaft bearing.
3. The variable capacity rotary compressor according to claim 1, wherein the oil storing chamber comprises an inner diameter part which is formed on the upper portion of the shaft bearing to have an increased inner diameter.
4. The variable capacity rotary compressor according to claim 1, wherein the rotating shaft comprises:
 - an oil passage axially extending from a lower end to a predetermined position of the rotating shaft; and
 - an oil supply hole formed on the rotating shaft in a radial direction to allow the oil passage to communicate with the oil guide groove via the oil supply hole, to feed oil from the oil passage to the oil guide groove.
5. The variable capacity rotary compressor according to claim 4, wherein the oil supply hole is plural in number and formed at positions corresponding to lower ends of the oil guide groove and the oil storing chamber.

6. A variable capacity rotary compressor, comprising:
a rotating shaft;
a shaft bearing which supports the rotating shaft;
an oil guide provided on the rotating shaft to supply oil to frictional contact parts of the rotating shaft; and
an oil storing chamber at an upper portion of the shaft bearing to store a predetermined amount of oil fed through the oil guide therein.

7. The variable capacity rotary compressor according to claim 6, wherein the oil guide unit comprises:
an oil passage axially extending from a lower end to a predetermined position of the rotating shaft;
an oil pickup member provided in the lower portion of the oil passage to feed the oil to the oil passage;
an oil supply hole formed on the rotating shaft to allow the oil passage to communicate with an outer surface of the rotating shaft via the oil supply hole; and
an oil guide groove spirally formed on at least one of an inner surface of the shaft bearing and the outer surface of the rotating shaft.

8. The variable capacity rotary compressor according to claim 6, wherein the oil storing chamber has a larger inner diameter than an outer diameter of the rotating shaft to store the oil therein, the oil storing chamber being shaped like a ring and being mounted at a lower portion of the upper portion of the shaft bearing.

9. The variable capacity rotary compressor according to claim 6, wherein the oil storing chamber comprises an inner diameter part which is formed on the upper portion of the shaft bearing to have an increased inner diameter.

10. The variable capacity rotary compressor according to claim 1, wherein an inner diameter of the oil storing chamber is larger than an outer diameter of the rotating shaft to thereby store the oil therein.

11. The variable capacity rotary compressor according to claim 10, further comprising a lower portion of the upper portion of the shaft bearing, wherein the oil storing chamber comprises a ring which is mounted at the lower portion of the upper portion of the shaft bearing.

12. The variable capacity rotary compressor according to claim 1, wherein the oil storing chamber comprises a large inner diameter part formed on the upper portion of the shaft bearing to have an increased inner diameter.

13. The variable capacity rotary compressor according to claim 1, wherein the rotating shaft comprises:

an oil passage axially extending from a lower end to a predetermined position of the rotating shaft;

an oil pickup member provided in the lower portion of the oil passage to feed the oil to the oil passage; and

an oil supply hole formed on the rotating shaft in a radial direction to allow the oil passage to communicate with the oil guide groove via the oil supply hole, thereby feeding oil from the oil passage to the oil guide groove.

14. The variable capacity rotary compressor according to claim 6, wherein an inner diameter of the oil storing chamber is larger than an outer diameter of the rotating shaft to thereby store the oil therein.

15. The variable capacity rotary compressor according to claim 6, wherein the oil storing chamber comprises a large inner diameter part formed on the upper portion of the shaft bearing to have an increased inner diameter.

16. A variable capacity rotary compressor, comprising:

a rotating shaft, having an outer cylindrical surface, which is rotated in a clockwise or a counter-clockwise direction;

a shaft bearing, having an inner cylindrical surface in contact with the outer cylindrical surface of the rotating shaft, which supports the rotating shaft in a substantially vertical position;

an oil guide groove which is spirally formed on at least one of the outer cylindrical surface of the rotating shaft and the inner cylindrical surface of the shaft bearing to supply oil to the contacting surfaces; and

an oil storing chamber at an upper portion of the shaft bearing to communicate with the oil guide groove, and to store oil therein.

17. The variable capacity rotary compressor according to claim 16, wherein an inner diameter of the oil storing chamber is larger than an outer diameter of the rotating shaft to thereby store the oil therein.

18. The variable capacity rotary compressor according to claim 16, wherein the oil storing chamber comprises a large inner diameter part formed on the upper portion of the shaft bearing to have an increased inner diameter.

19. The variable capacity rotary compressor according to claim 16, wherein the rotating shaft comprises:

an oil passage axially extending from a lower end to a predetermined position of the rotating shaft;

an oil pickup member provided in the lower portion of the oil passage; and

an oil supply hole formed on the rotating shaft in a radial direction to allow the oil passage to communicate with the oil guide groove via the oil supply hole, thereby feeding oil from the oil passage to the oil guide groove.

20. The variable capacity rotary compressor according to claim 16, further comprising lower ends of the oil guide groove and the oil storing chamber, wherein the oil supply hole is formed at a position corresponding to the lower ends of the oil guide groove and the oil storing chamber.